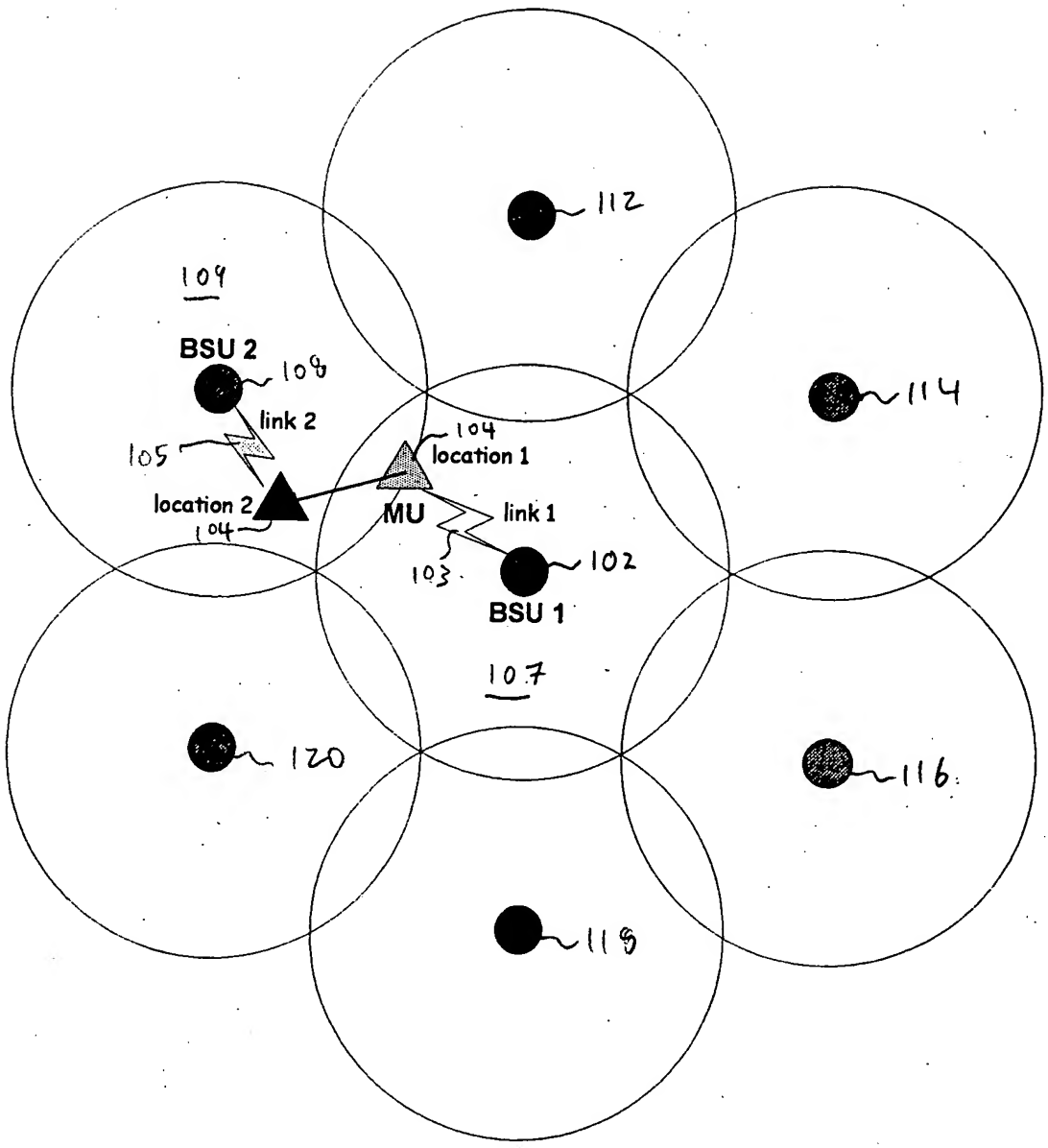
112
109
BSU 2
108
link 2
105
location 2
104
104
location 1
MU
link 1
103
102
BSU 1
114
107
120
116
118

200

Fig 1

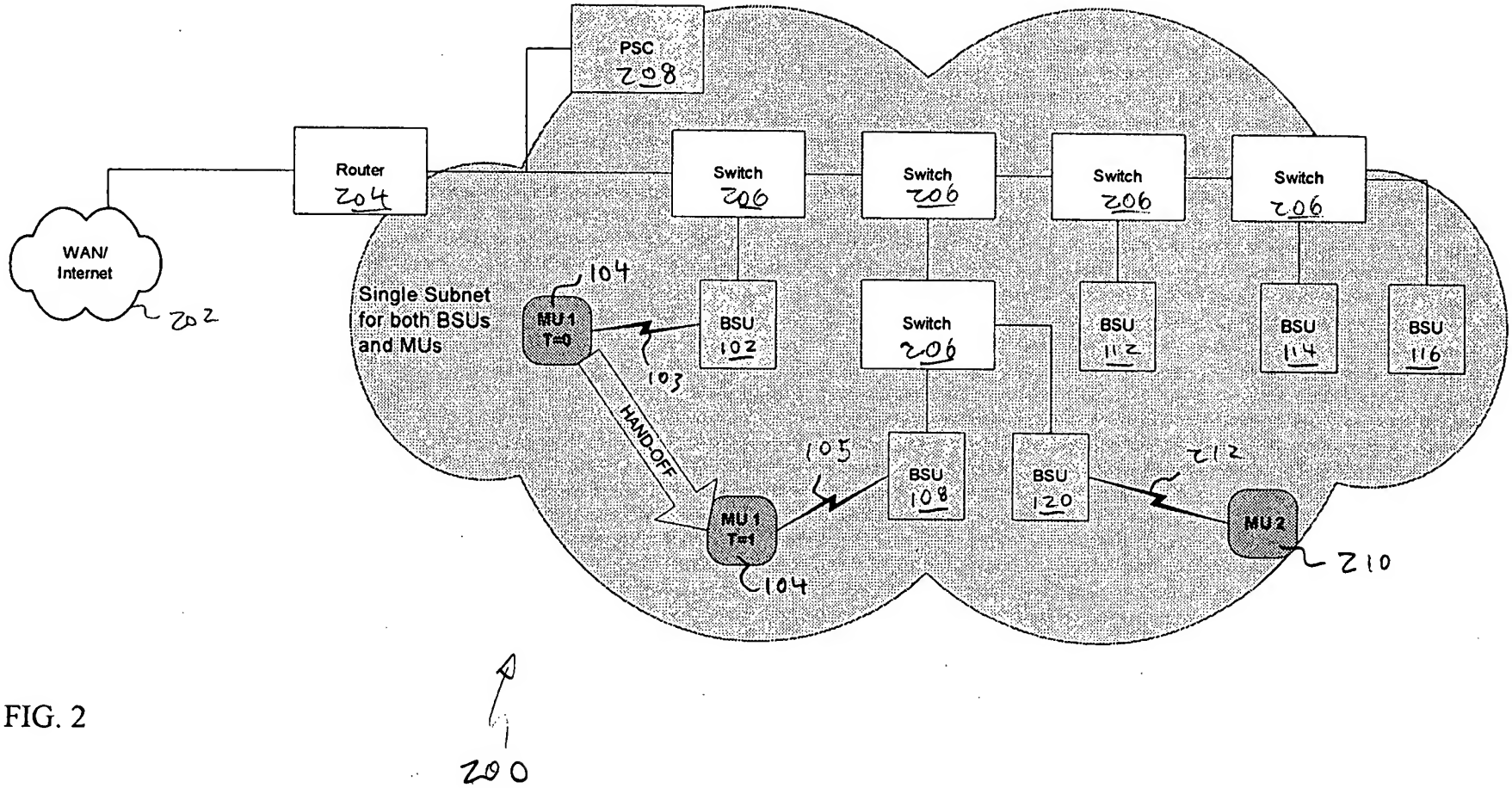
PSC
208
Router
204
Switch
206
Switch
206
Switch
206
Switch
206
WAN/
Internet
202
Single Subnet
for both BSUs
and MUs
MU1
T=0
104
103
BSU
102
Switch
206
BSU
112
BSU
114
BSU
116
HAND-OFF
105
BSU
108
BSU
120
212
MU1
T=1
104
MU2
210
200

FIG. 2

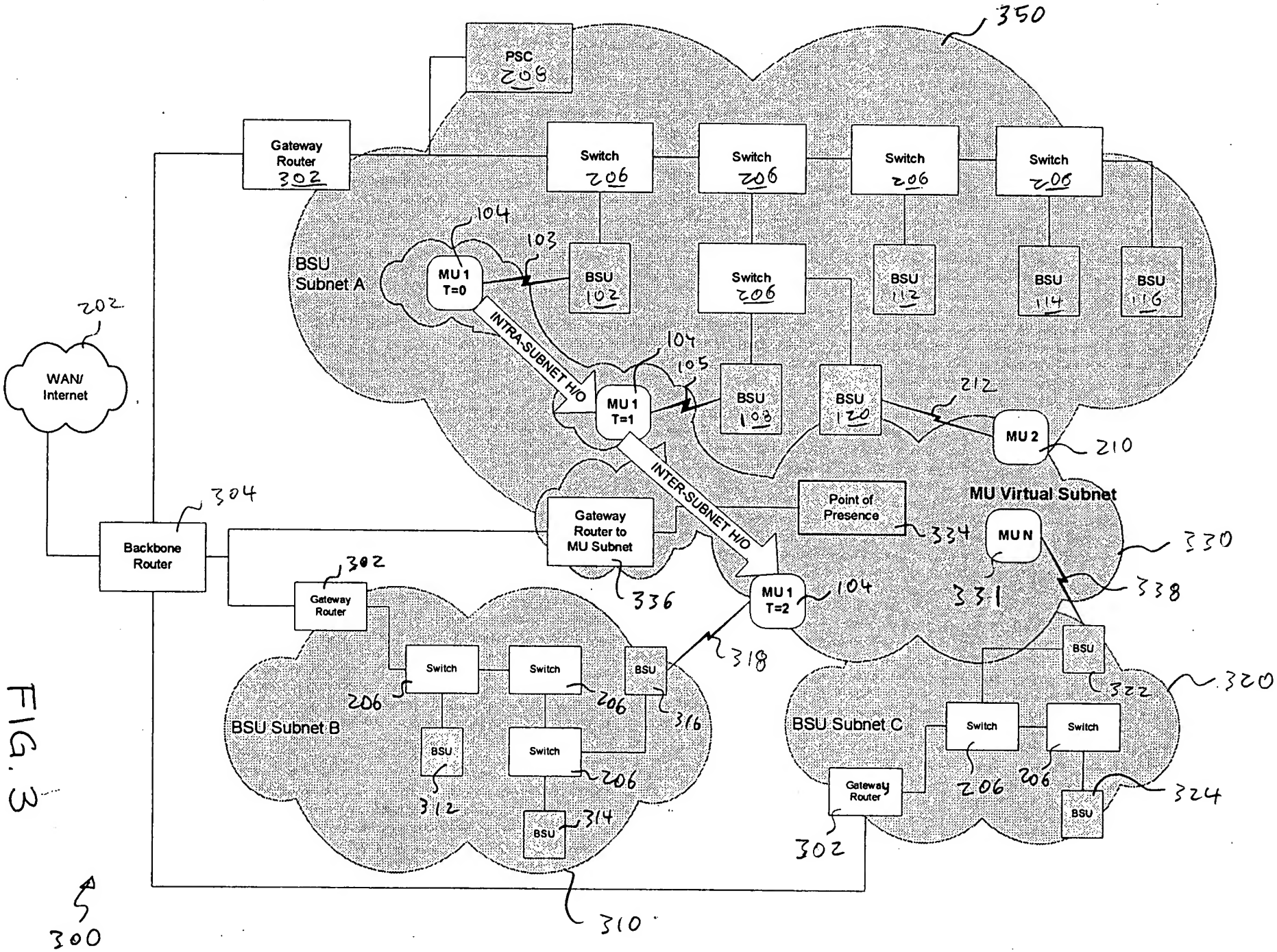
350
PSC
209
Gateway Router
302
Switch
206
Switch
206
Switch
206
Switch
206
104
103
BSU Subnet A
MU 1
T=0
BSU
102
Switch
206
BSU
112
BSU
114
BSU
116
202
WAN/
Internet
INTRA-SUBNET H/O
107
105
MU 1
T=1
BSU
108
BSU
120
212
MU 2
210
INTER-SUBNET H/O
Point of
Presence
MU Virtual Subnet
334
MU N
330
331
338
304
Backbone
Router
Gateway
Router to
MU Subnet
336
302
Gateway
Router
MU 1
T=2
104
318
BSU Subnet B
Switch
206
Switch
206
BSU
316
BSU
312
Switch
206
BSU
314
310
BSU Subnet C
BSU
322
320
Switch
206
Switch
206
Gateway
Router
302
BSU
324
300

FIG. 3

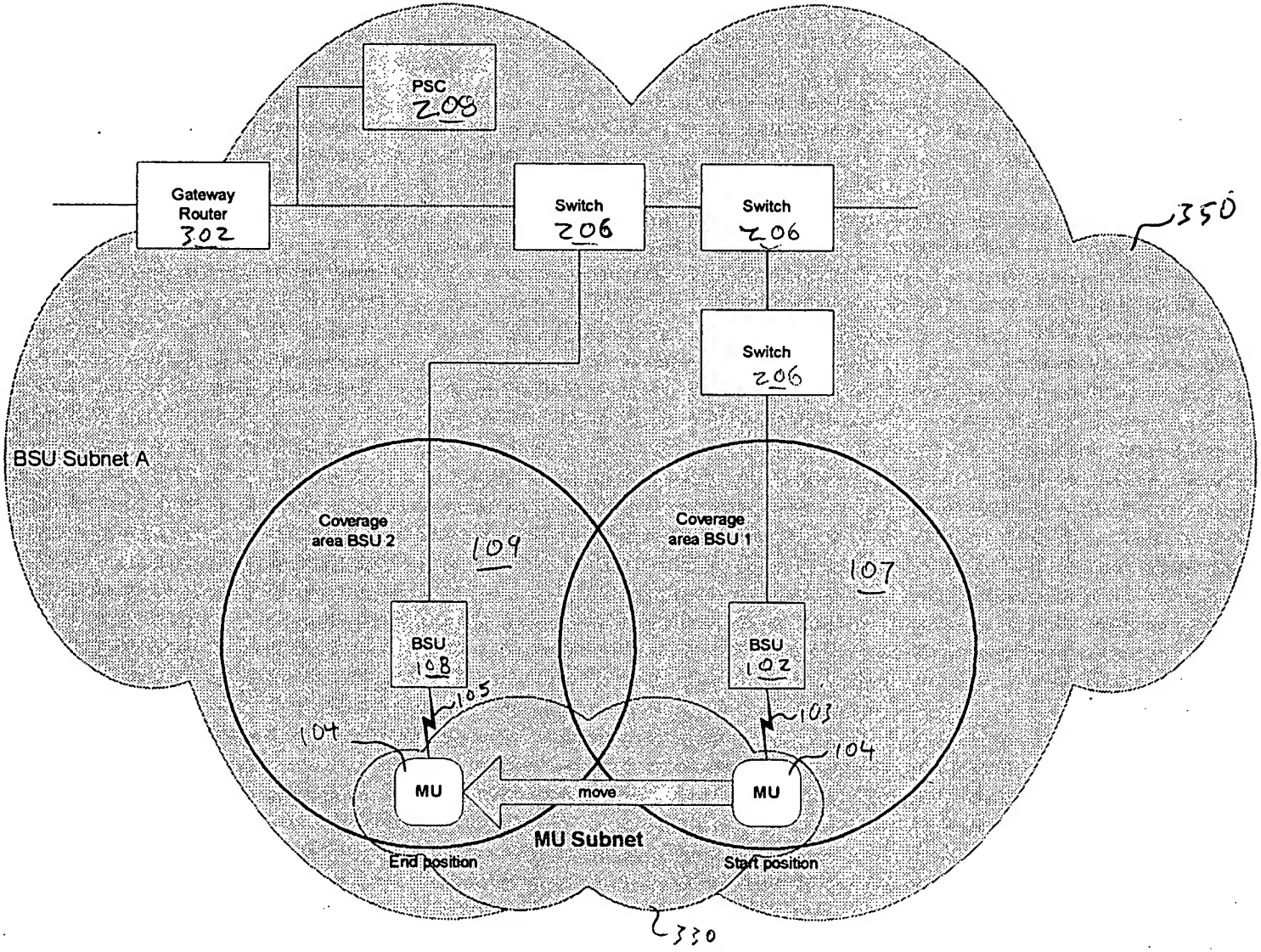

Figure 4 Intra-subnet Hand-off

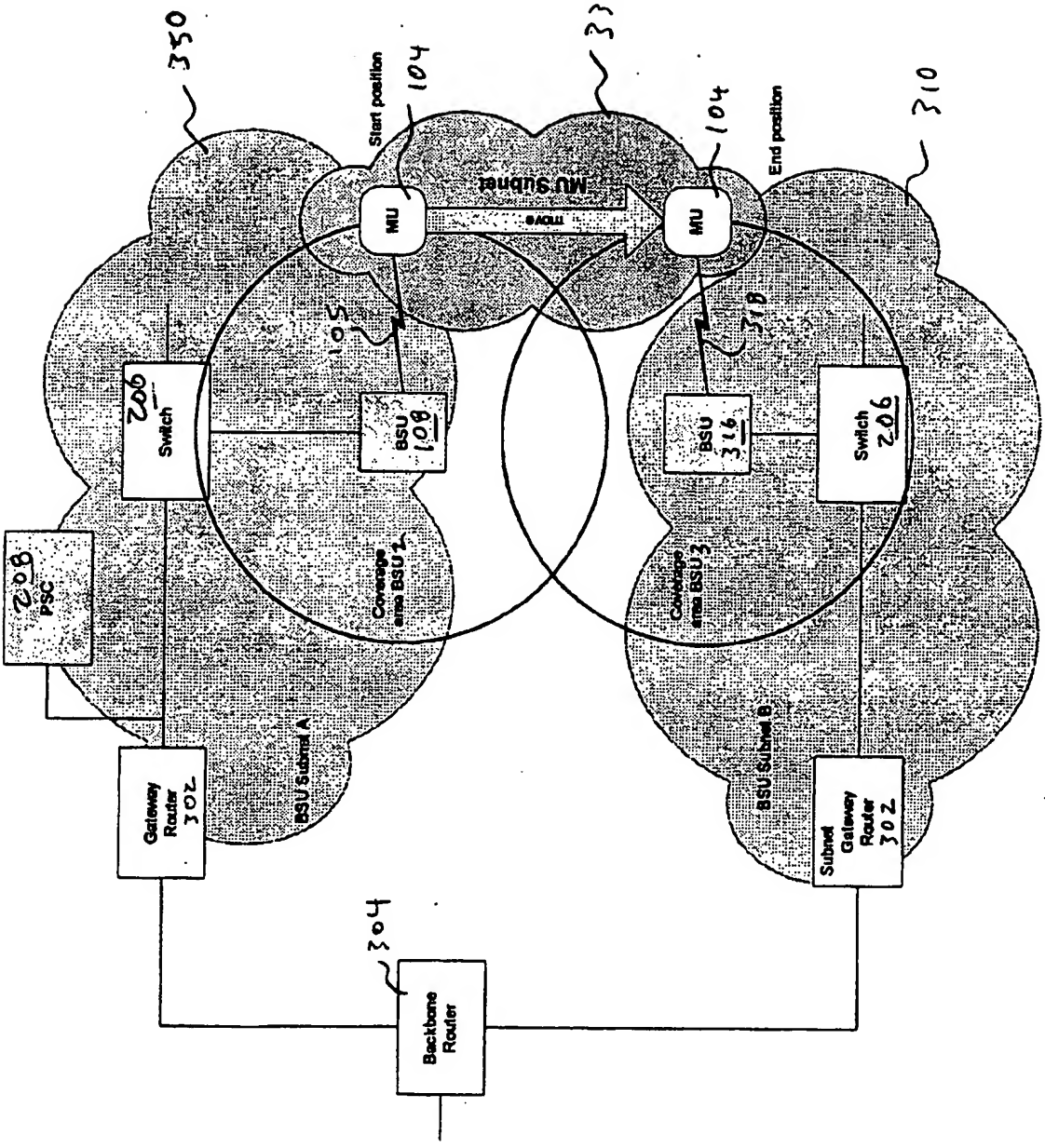

Figure 5 Inter-subnet Hand-off

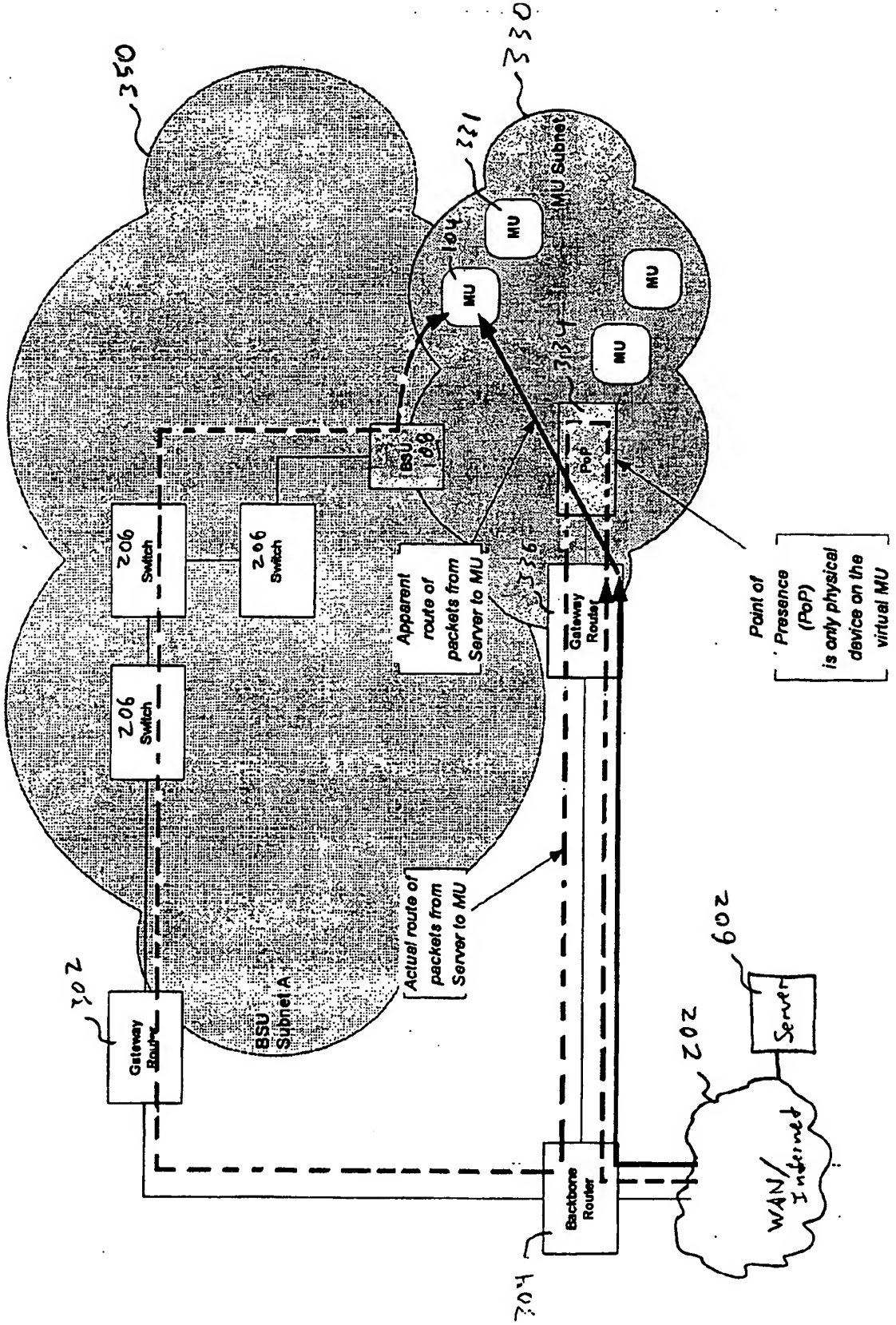
350
330
321
MU Subnet
MU
MU
MU
MU
104
BSU
108
206
Switch
206
Switch
206
Switch
BSU
Subnet A
Gateway
Router
202
Gateway
Router
PoP
336
334
Apparent
route of
packets from
Server to MU
Actual route of
packets from
Server to MU
Point of
Presence
(PoP)
is only physical
device on the
virtual MU
subnet
Backbone
Router
204
WAN/
Internet
202
Server
602

FIG. 6

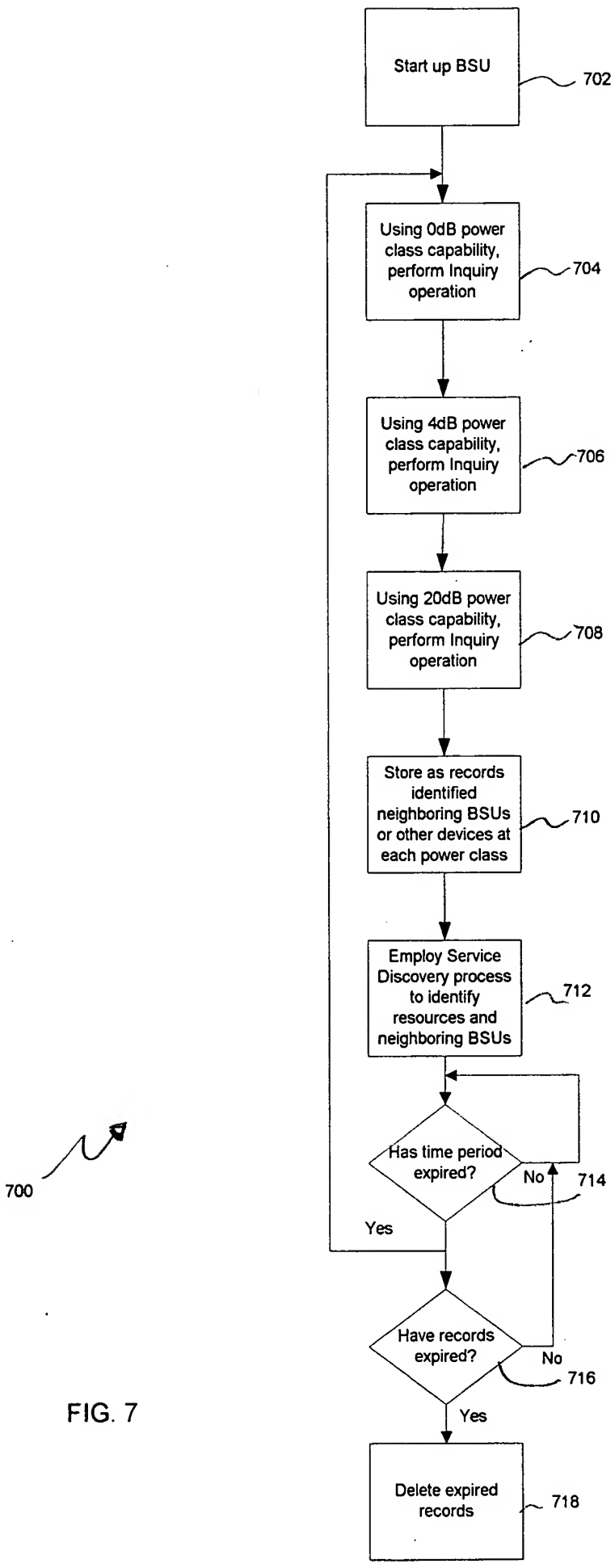
Start up BSU
702
Using 0dB power class capability, perform Inquiry operation
704
Using 4dB power class capability, perform Inquiry operation
706
Using 20dB power class capability, perform Inquiry operation
708
Store as records identified neighboring BSUs or other devices at each power class
710
Employ Service Discovery process to identify resources and neighboring BSUs
712
Has time period expired?
No
714
Yes
Have records expired?
No
716
Yes
Delete expired records
718
700

FIG. 7

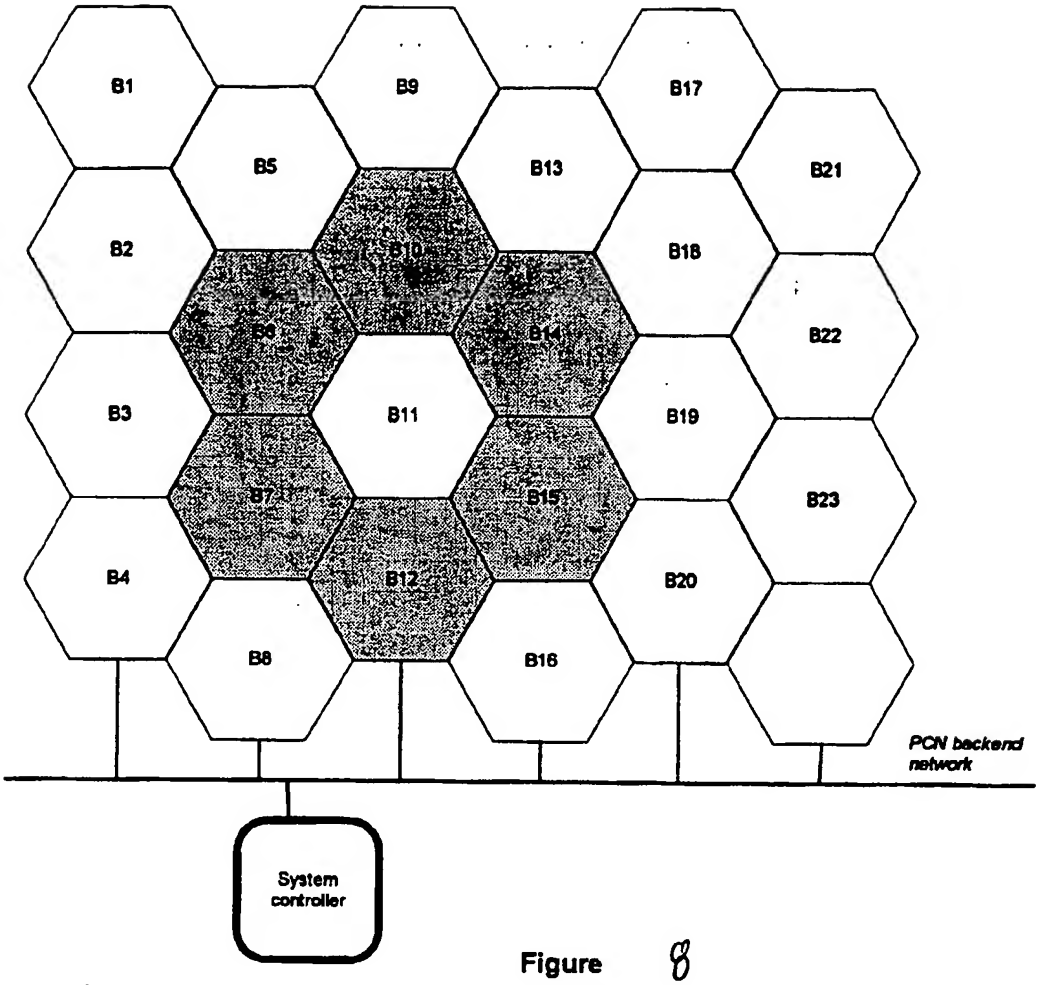
B1
B9
B17
B5
B13
B21
B2
B10
B18
B6
B14
B22
B3
B11
B19
B7
B15
B23
B4
B12
B20
B8
B16
PCN backend network
System controller

Figure 8

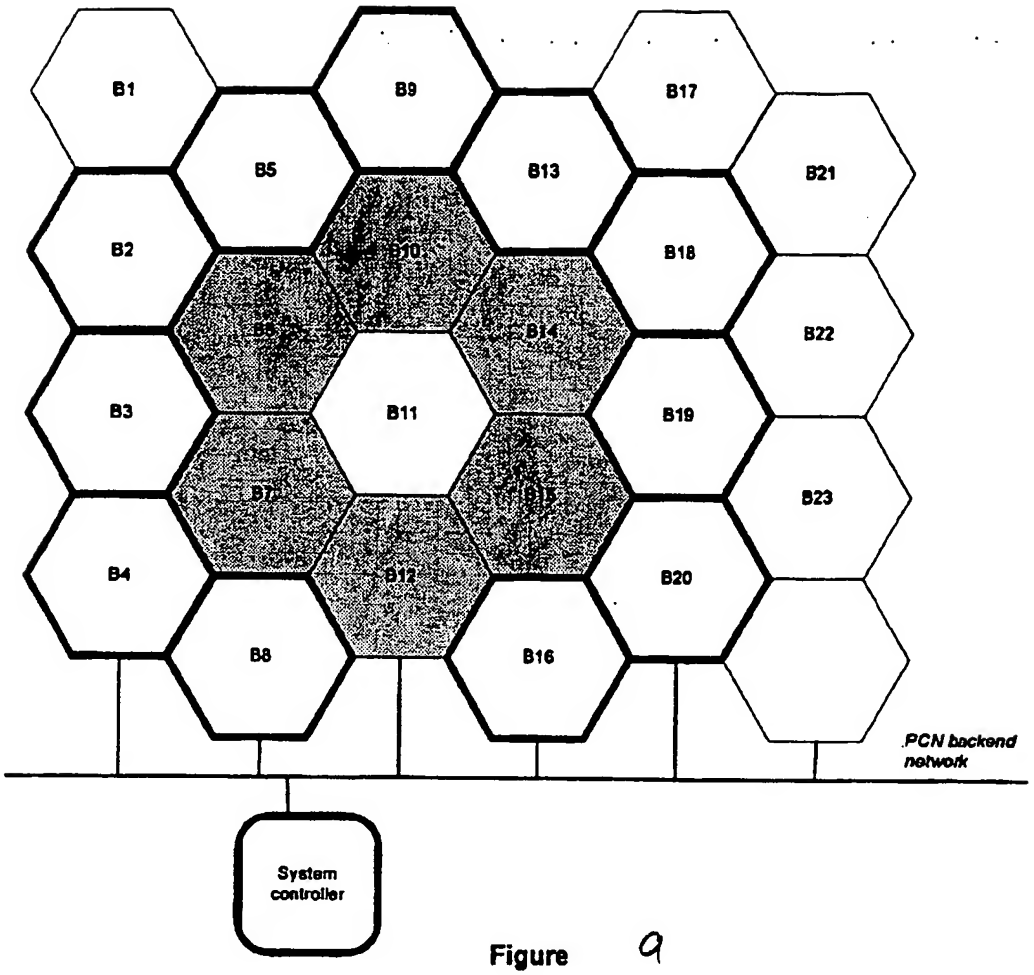
B1
B9
B17
B5
B13
B21
B2
B10
B18
B6
B14
B22
B3
B11
B19
B7
B15
B23
B4
B12
B20
B8
B16
PCN backend network
System controller

Figure 9

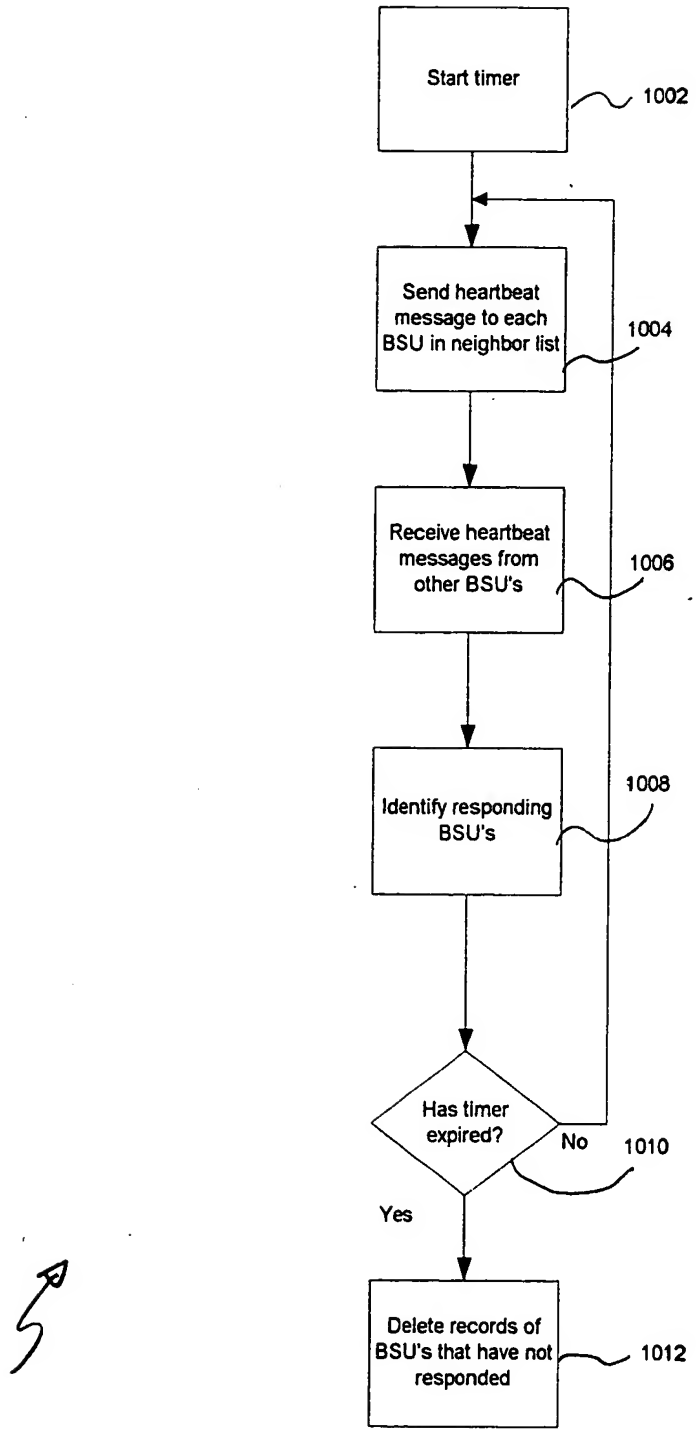
Start timer
1002
Send heartbeat message to each BSU in neighbor list
1004
Receive heartbeat messages from other BSU's
1006
Identify responding BSU's
1008
Has timer expired?
No
1010
Yes
Delete records of BSU's that have not responded
1012
1000

FIG. 10

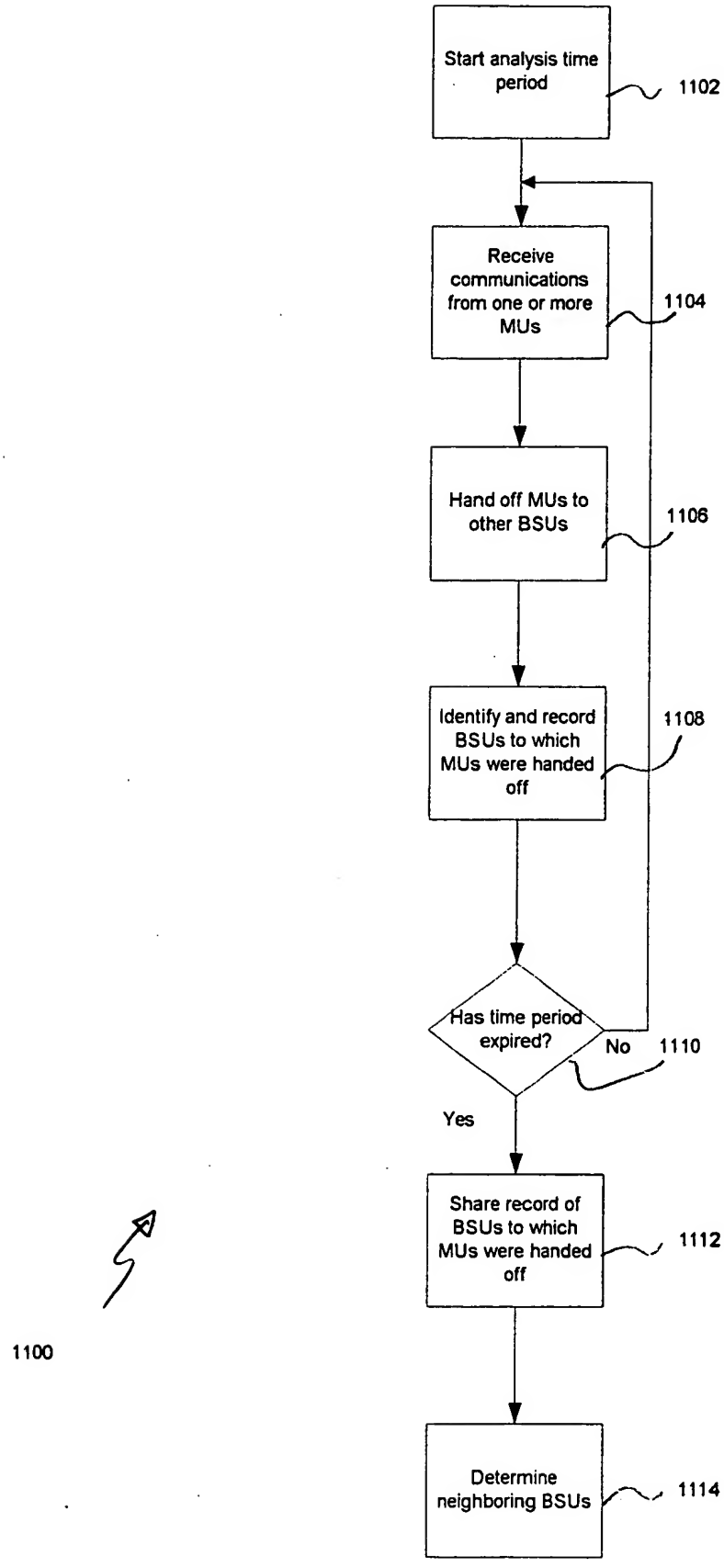
Start analysis time period
1102
Receive communications from one or more MUs
1104
Hand off MUs to other BSUs
1106
Identify and record BSUs to which MUs were handed off
1108
Has time period expired?
No
1110
Yes
Share record of BSUs to which MUs were handed off
1112
Determine neighboring BSUs
1114
1100

FIG. 11

Neighbor list record

Neighbor's Bluetooth device address ("BD Addr")	<unique 48 bit address>	1202
Neighbor relationship	<1st, 2nd, 3rd tier>	1204
Initialization Time	<date, time>	1206
Rediscovery Time	<date, time>	1208
Neighbor's sync master	<predetermined BD Addr>	1210
Record Expiration	<date, time>	1212

Fig. 12

1200